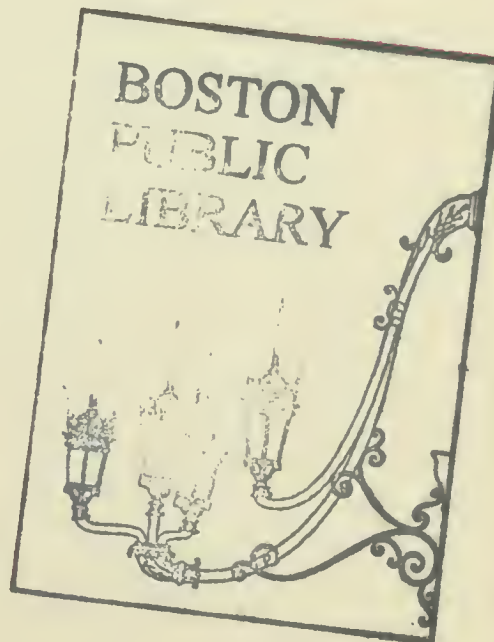


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FEASIBILITY STUDY FOR A BRIDGE CROSSING  
OF LITTLE MYSTIC CHANNEL  
AT CHELSEA ST.  
CHARLESTOWN, MASSACHUSETTS

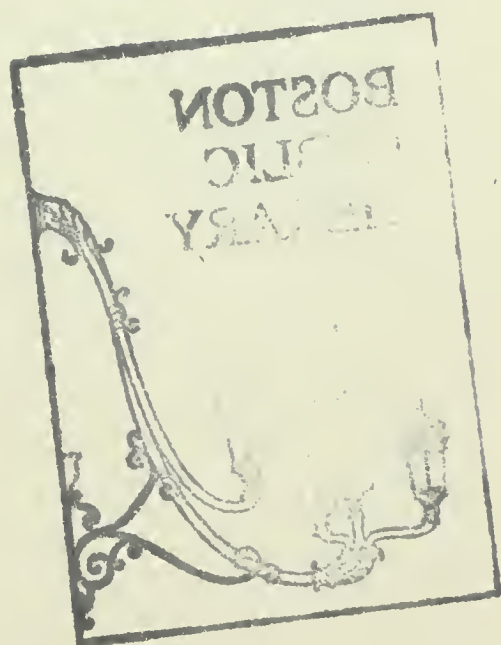


Charlestown  
E 26 K.F

EDWARDS AND KELCEY



SEPTEMBER 1972



## INDEX

1. DESCRIPTION OF SITE .....	1
2. POSSIBLE STRUCTURAL SOLUTIONS .....	3
3. DISCUSSION AND RECOMMENDATIONS .....	5

### APPENDIX:

PLAN, PROFILE & CROSS SECTION OF RECOMMENDED SCHEME



## DESCRIPTION OF SITE

Presently Chelsea Street on the south side of the Little Mystic Channel is a 45 foot wide cobble stone street on an embankment supported by retaining walls on each side, from the Boston Naval Shipyard on the east and William J. Barry Playground on the west.

At one time Chelsea Street spanned the channel with a movable bridge which has since been removed. The only remains are the abutment on the south side and granite channel piers which project about 5 feet above high water.

The channel is approximately 265 feet wide overall, while the present center navigable channel is 75 feet wide. Little Mystic Channel east of the proposed crossing at Chelsea Street provides access for seagoing freighters that utilize the Mass. Port Authority's dock and warehouse facilities.

At the present time a boat ramp is under construction on the north side of the channel west of Chelsea Street which should generate increased recreational boat traffic. An additional strip of vacant land on the north side of the channel opposite the CharlesNewtown Housing Development has been earmarked for recreational use.

The Bunker Hill Yacht Club uses the present piers on the south side of the Channel at Chelsea Street.

The north side of the channel has been extensively developed and includes dock facilities, warehouses, salvage yards, the U.S. Gypsum Company and track work that comprises the last remaining railroad fan yard in the City of Boston.



The Tobin Memorial Bridge crosses over the Channel just west of Chelsea Street at an elevation of approximately 130 to 140 feet above the Channel.





## POSSIBLE STRUCTURAL SOLUTIONS

### SCHEME A: FIXED MEDIUM LEVEL BRIDGE

This scheme involves a 300 foot bridge that spans between the existing Chelsea Street embankment on the south side of the channel and the Mass. Port facilities on the north side. The alignment parallels the Tobin Memorial Bridge and provides a roadway width of 40 feet curb to curb. The existing boat channel will be relocated to the south side of the channel affording a 75 foot width and a minimum underclearance of 10 feet at high water. The vertical alignment of the bridge incorporates a maximum grade of 4% and provides an at grade crossing of the railroad tracks on the north side of the channel.

The existing telephone lines that cross under the channel will be relocated and carried by the bridge superstructure.

The existing pier substructures in the channel will be removed unless further study reveals they would be structurally adequate to incorporate into the new bridge.

The proposed bridge would cross the channel with three spans of 100 feet each. The superstructure would be of precast prestressed concrete boxes which will provide a minimum depth of structure, rapid construction, and freedom of maintenance.

The estimated construction cost of the scheme is \$900,000.



B. Bascule Bridge

This scheme provides for a steel bascule bridge along the existing alignment of Chelsea Street at the same location occupied by the previous bridge. The existing embankment on the south side would be lowered by approximately 17 feet and the bridge with a roadway width of 40 feet curb to curb would cross the channel with three 100 foot spans. The center span would be the movable Bascule span.

Depending on the condition of the existing channel pier substructures they will either be removed or incorporated into the new bridge.

This scheme provides for a vertical underclearance of 8 feet at high water which will allow many small pleasure boats to use the channel without opening the bridge and halting roadway traffic.

The estimated construction cost of this scheme is \$1,450,000.00.

An alignment curving west under the Tobin Memorial Bridge and descending onto Terminal Street was ruled out because of excessive length, cost and land-taking required on the north side of the channel.



## DISCUSSION

Our investigation of the site indicates that the best solution involves using the present alignment of Chelsea Street. Since Chelsea Street on the south side of the Channel is 16 feet higher than the north bank it would be advantageous to relocate the boat channel to the south side.

Preliminary discussions have been held with the U.S. Coast Guard concerning minimum bridge underclearance and relocation of the boat channel. Relocation of the boat channel is not objectionable as far as the Coast Guard is concerned and they have no strict requirements for underclearance. The ten (10) foot minimum underclearance used in this study is considered adequate for a portion of the boating public, but will of necessity limit channel use to small masted boats. Since boating activities on the channel have yet to develop it is difficult to predict what clearance will best suit boating interests.

## RECOMMENDATIONS

It is recommended that a bridge crossing at this site be constructed as suggested in Scheme A, a fixed span providing a 75' boat channel and a 10 foot minimum underclearance at high water. (Estimated Construction Cost \$900,000.00.)

The underclearance question can be explored further when a permit is filed with the Coast Guard and all interested parties can make their wishes known.

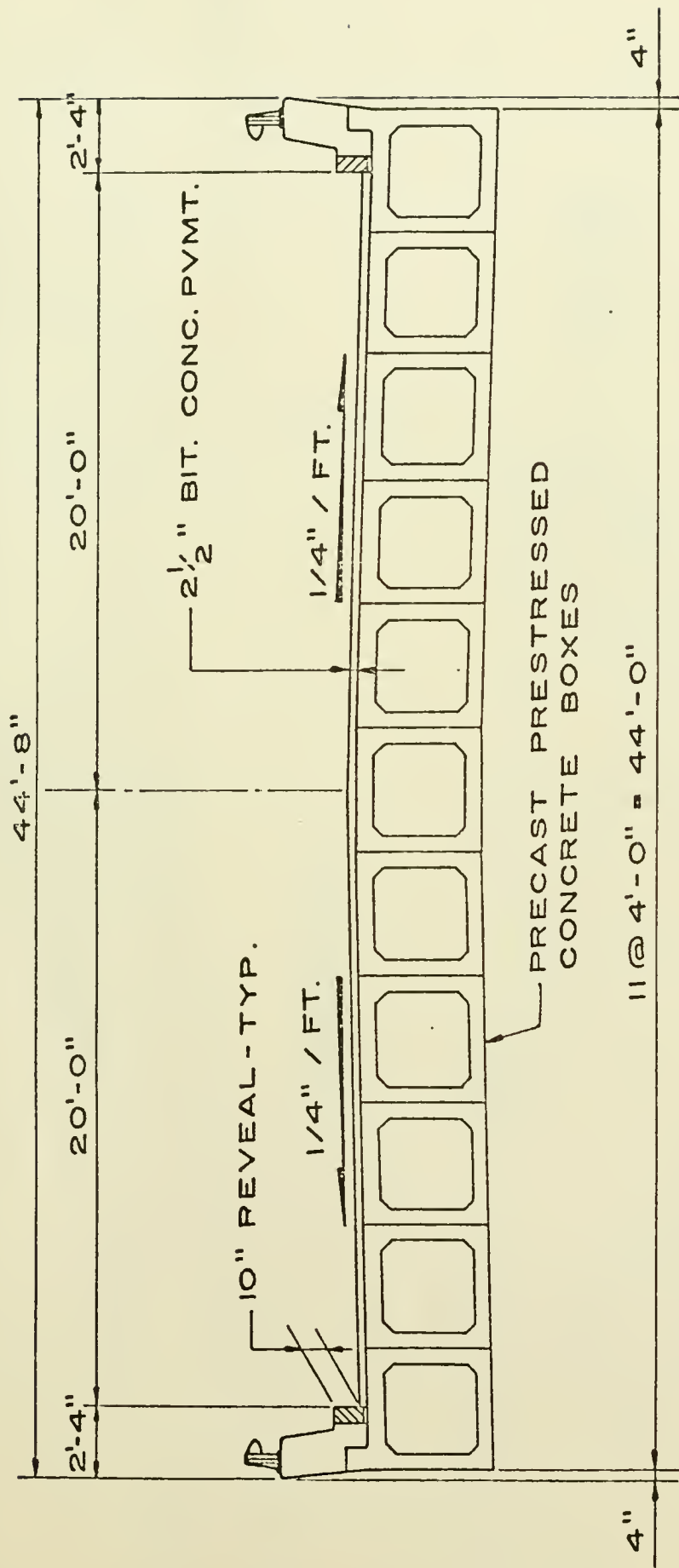


## APPENDIX





STRUCTURE



TYPICAL SECTION

CHARLESTOWN, MASS  
PROP. CHELSEA STREET  
over  
LITTLE MYSTIC CHANNEL  
EDWARDS AND KELCEY INC.







TOBIN MEMORIAL BRIDGE

STREET

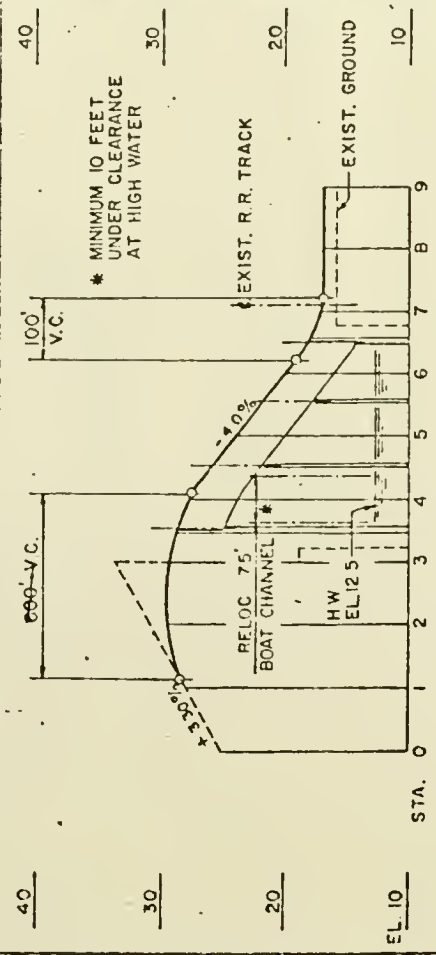
TERMINAL

LITTLE MYSTIC CHANNEL

NAVY YARD

CHARLESTOWN, MASS.  
PROP. CHELSEA STREET  
over  
LITTLE MYSTIC CHANNEL  
EDWARDS AND KELCEY INC.

SCALE 1" = 100'



DATUM = BOSTON CITY BASE. LOW WATER ELEV. 0.0

PROFILE

SCALE H. 1" = 200', V. 1" = 10'



TOBIN MEMORIAL BRIDGE

STREET

TERMINAL

LITTLE MYSTIC CHANNEL

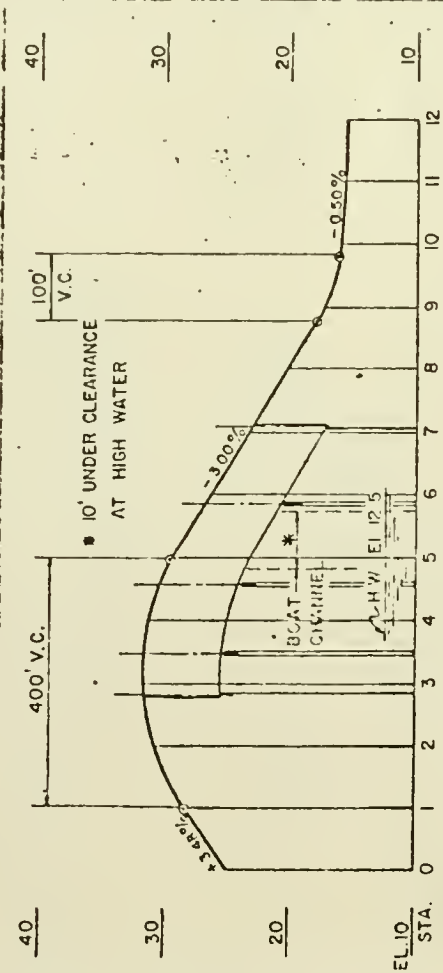
PLAYGROUND

NAVY YARD

EXIST. CHURCH STREET

CHARLESTOWN, MASS  
PROP. CHELSEA STREET  
over  
LITTLE MYSTIC CHANNEL  
EDWARDS AND KELCEY INC.

SCALE: 1"=100'



DATUM = BOSTON CITY BASE LOW WATER ELEV 0.0

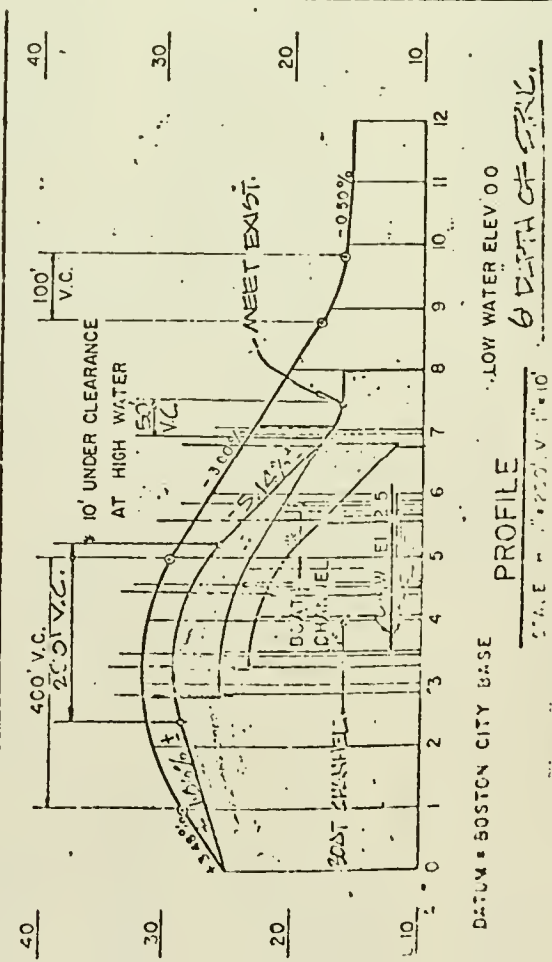
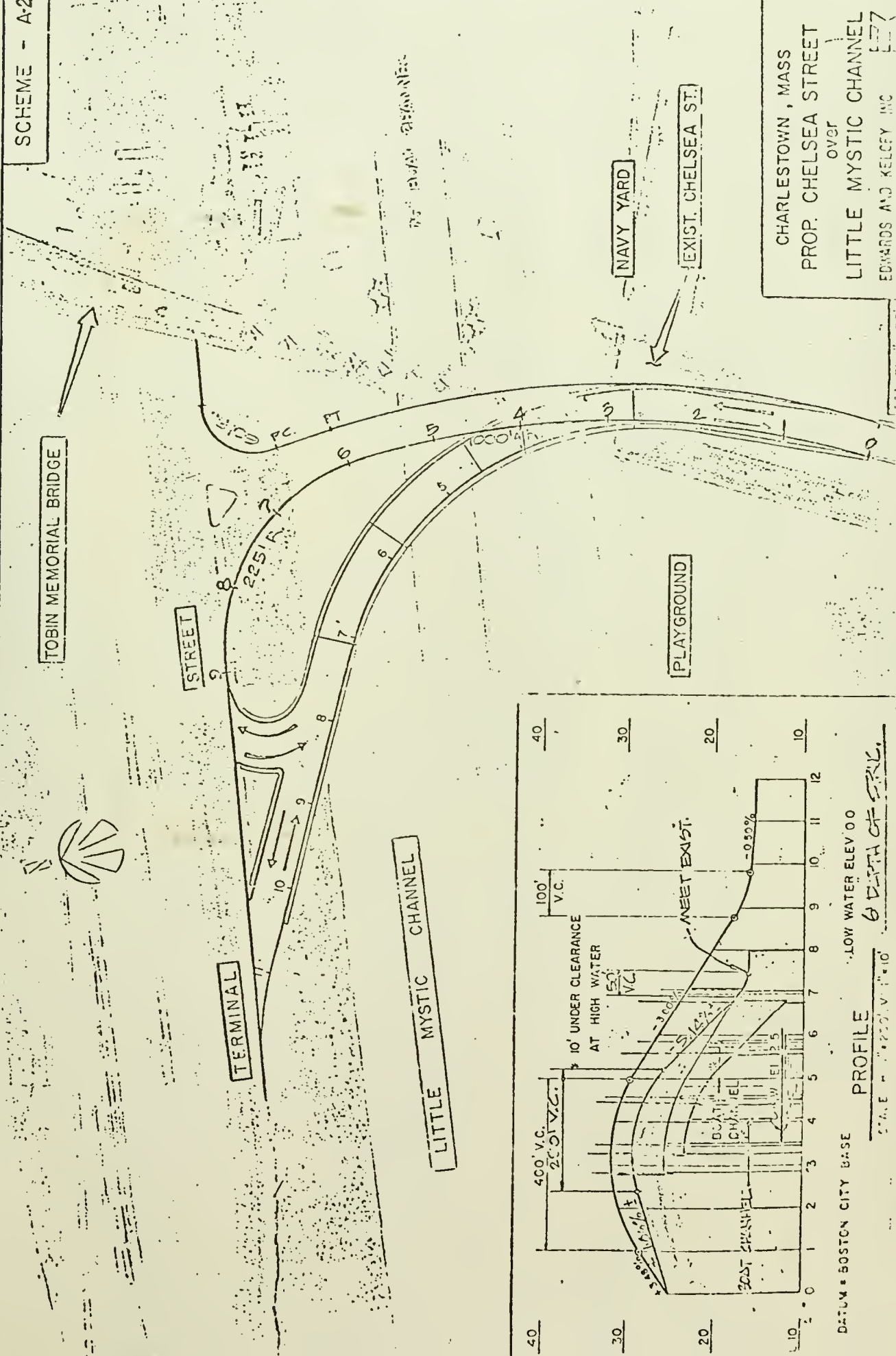
PROFILE

SCALE: H. 1"=200', V. 1"=10'

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CHARLESTOWN, MASS  
 PROP. CHELSEA STREET  
 OVER  
 LITTLE MYSTIC CHANNEL  
 EDWARDS AND KELCEY INC

DATE - BOSTON CITY BASE  
 PROFILE  
 SCALE - 1" = 20' V. 1" = 10' H.  
 6 DATA OF C.R.L.

